

ONTARIO MINISTRY OF ENVIRONMENT



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OPERATING SUMMARY

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C367
1973
MOE

CAMPBELLFORD

WATER POLLUTION CONTROL PLANT

1
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7
3

**TD
367
.A56
C367
1973**

Campbellford : water pollution
control plant.

81491



Ontario

MINISTRY OF THE ENVIRONMENT

MINISTER
Honourable William G. Newman

DEPUTY MINISTER
E. Biggs

ASSISTANT DEPUTY MINISTER
REGIONAL OPERATIONS
J. Barr

REGIONAL OPERATIONS DIVISION

DIRECTOR, CENTRAL REGION
P. Cockburn

MANAGER, UTILITY OPERATIONS
A. Thomas

CAMPBELLFORD
WATER POLLUTION CONTROL PLANT

MINISTRY OF THE ENVIRONMENT

1973 ANNUAL OPERATING SUMMARY

prepared by
Plant Performance Unit
TECHNICAL SERVICES BRANCH
T. Cross, Director



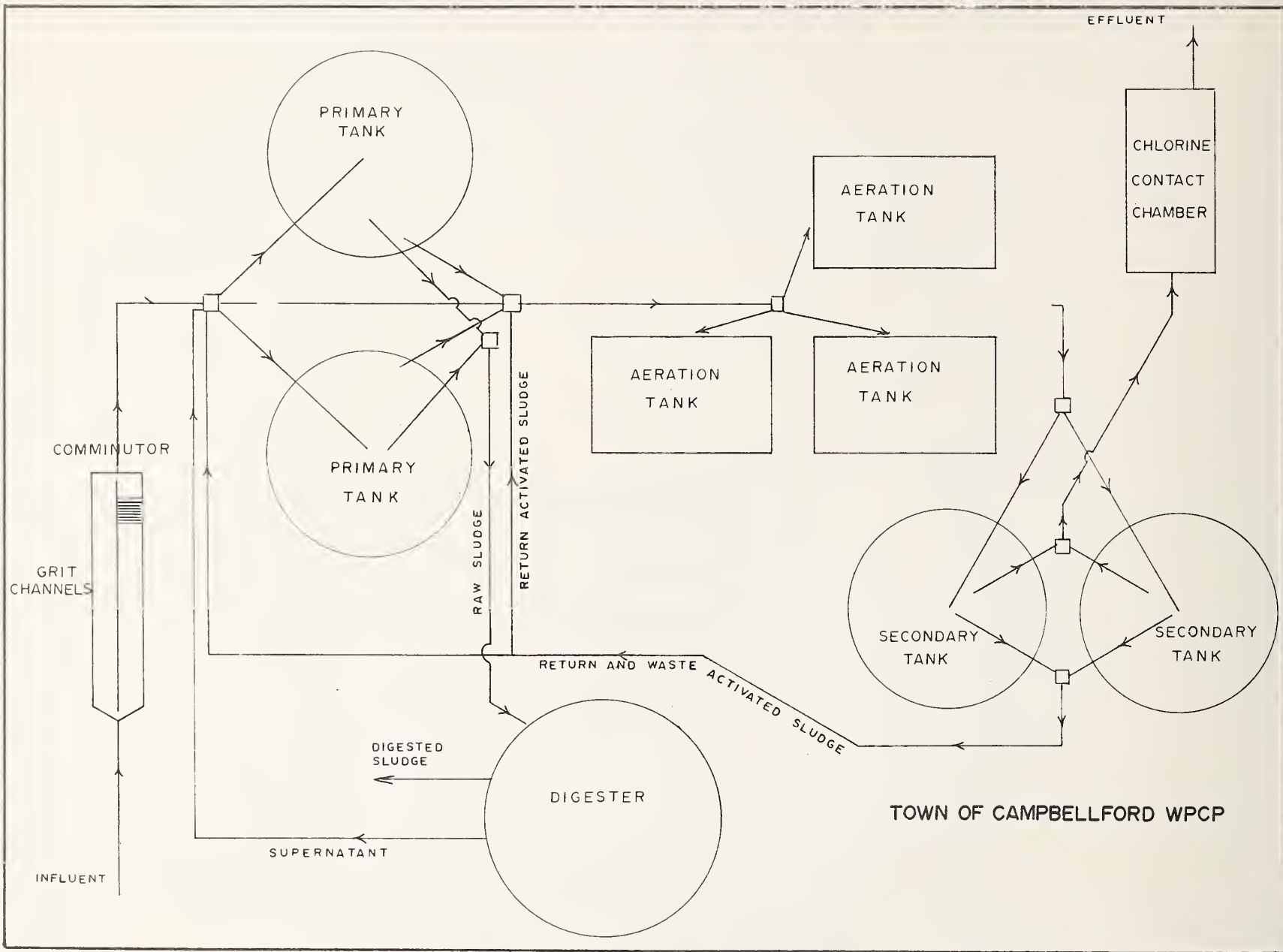
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DESIGN DATA

PROJECT Town of Campbellford WPCP

PROJECT NO. 1-0028-66

DESIGN FLOW 1.0 MIGD

BOD - Raw Sewage 200 mg/l

TREATMENT Activated Sludge

DESIGN POPULATION 4200

PRIMARY TREATMENT

Grit Removal

Type: Channels, manually cleaned
Size: Two 36'6"x2'8"x3'9"
Flow Velocity: 1 fps

Screening

Type: Manually cleaned

Comminution

Type: Worthington model 15C-5

Primary Sedimentation

Type: Dorr-Oliver-Long S-7
Size: Two 40'dia x 7' swd
Retention: 2.4 hours
Loading: Surface 400 gal/ft²/day
Weir 4000 gal/ft/day

Outfall

- to the Trent River

SECONDARY TREATMENT

Aeration Tanks

Type: Mechanical
Size: Three, each 55,000 gallons
Retention: 4 hours
Air Supply: Simon Carves, one aerator per tank

Secondary Sedimentation

Type: Dorr-Oliver-Long S-7
Size: Two 45' dia x 9' swd
Retention: 4.8 hours
Loading: Surface 330 gal/ft²/day
Weir 3540 gal/ft/day

CHLORINATION

Type: Wallace & Tiernan V800
Size: One 400

Chlorine Contact Chamber

Retention: 30 minutes

DIGESTION SYSTEM

Type: Single stage
Size: 30' dia x 25' swd

PUMPING STATION

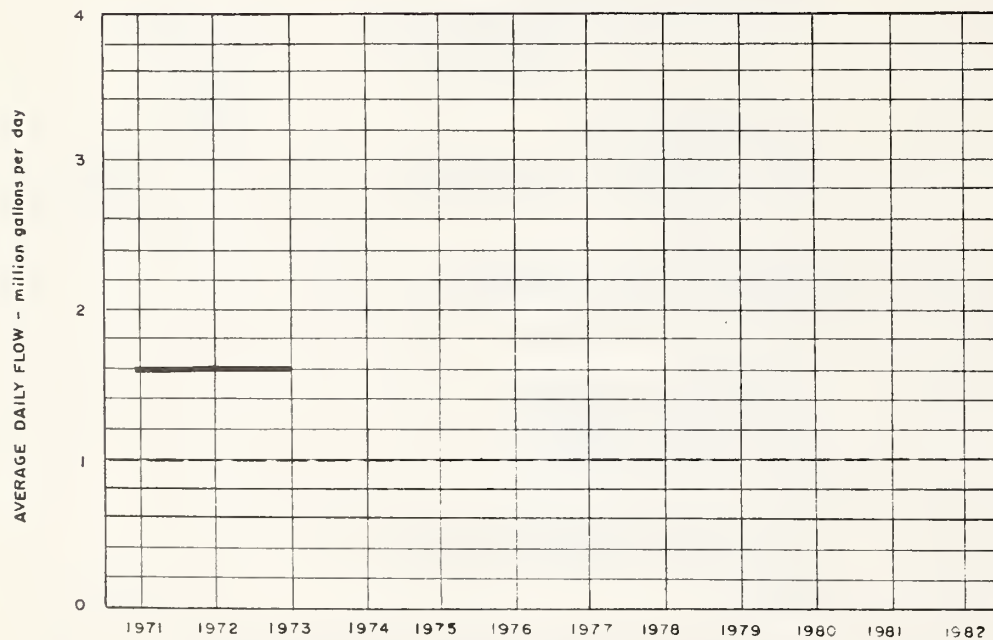
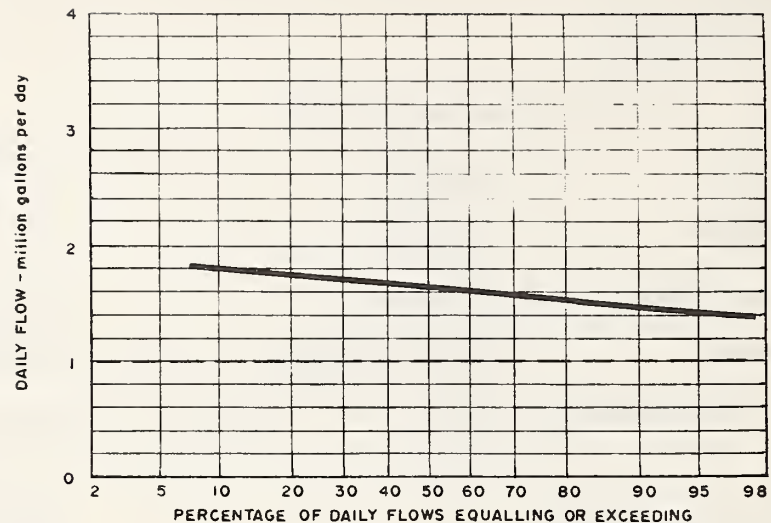
P. S. #1

Three Crane Deming each 800 US gpm @ 38' tdh

P. S. #2

Two Flygt CP3100 each 400 US gpm @ 24' tdh

FLOWs

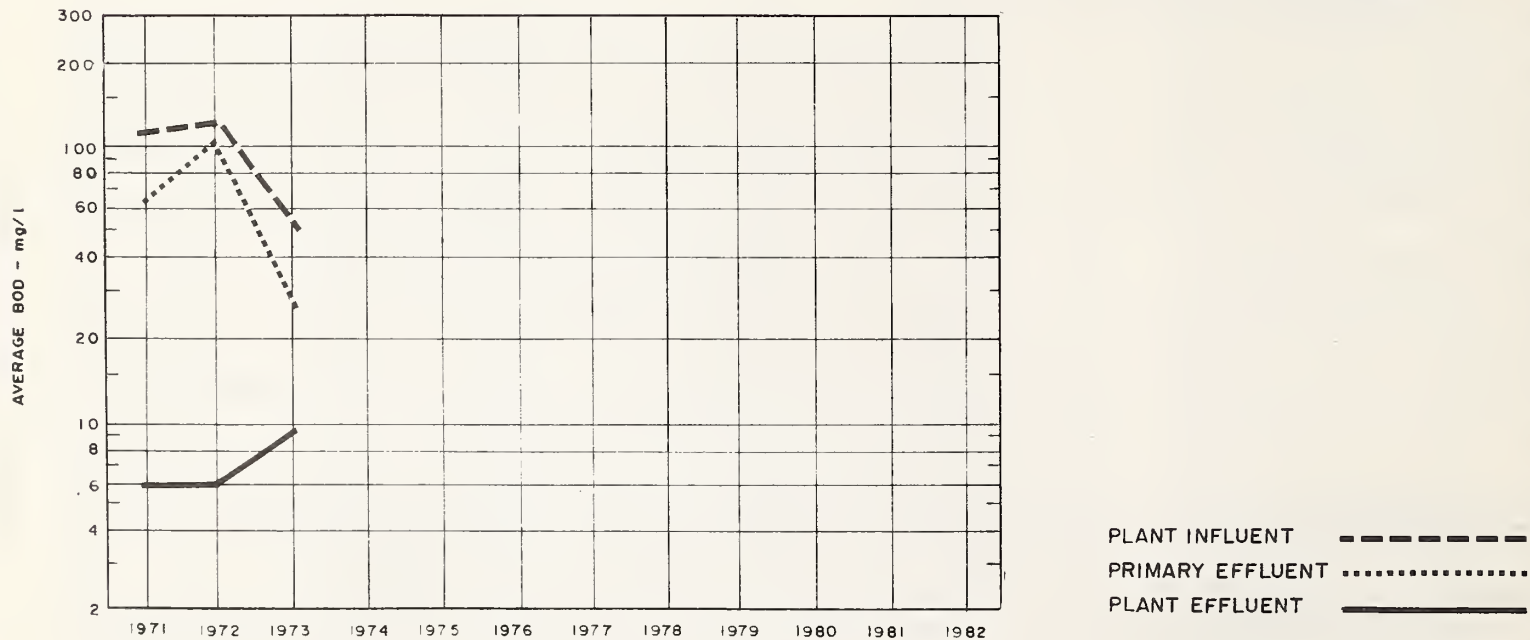
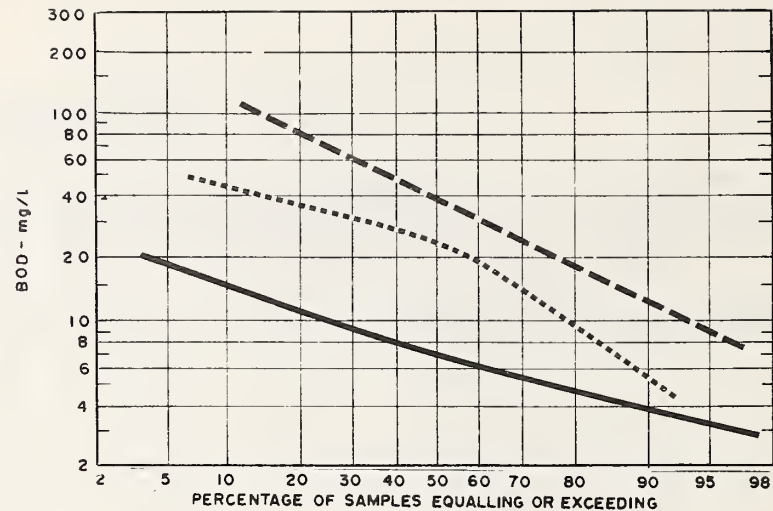


DESIGN CAPACITY — — — — —

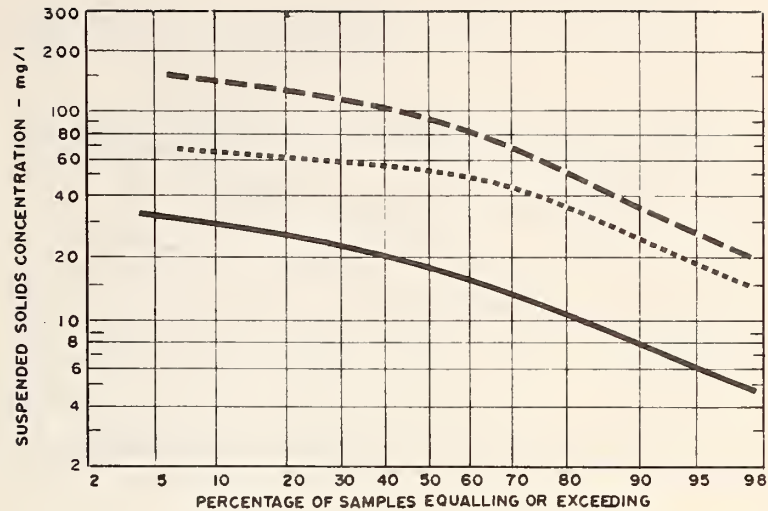
PLANT PERFORMANCE

MONTH	FLOWS			BIOCHEMICAL OXYGEN DEMAND				SUSPENDED SOLIDS				PHOSPHORUS	
	TOTAL FLOW	AVERAGE DAY	MAXIMUM DAY	INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT
	million gallons	mil. gal	mgd	mg/l	mg/l	%	10 ³ pounds	mg/l	mg/l	%	10 ³ pounds	mg/l P	mg/l P
JAN	53.1	1.7	1.8	49	11	78	20	121	12	90	58	4.3	0.9
FEB	47.0	1.7	1.8	85	12	86	34	114	18	84	45	7.1	1.3
MAR	54.2	1.7	1.9	25	10	60	8	86	18	79	37	1.8	1.2
APR	46.5	1.5	1.6	70	7	90	29	97	14	86	39	2.9	0.8
MAY	46.9	1.5	1.6	110	8	93	51	106	16	85	48	2.8	0.8
JUNE	46.6	1.6	1.7	42	7	83	16	79	7	91	33	3.9	0.8
JULY	46.3	1.5	1.5	27	8	70	9	81	8	90	34	1.4	0.7
AUG	47.8	1.5	1.7					204	12	94	92		
SEPT	43.3	1.4	1.5	53	5	91	21	74	16	78	25	2.0	0.7
OCT	45.7	1.5	1.8	88	8	91	37	88	9	90	36	2.8	2.1
NOV	47.9	1.6	1.8	36	14	61	10	59	14	76	21	0.9	3.5
DEC	47.2	1.5	1.6	12	17			52	11	79	19	1.0	0.5
TOTAL	572.5	-	-	-	-	-		-	-	-	487	-	-
AVG.		1.6	MAXIMUM 1.9	53	9	83	24	91	13	86	41	2.6	1.2
No. of Samples	-	-	-	27	27	-	-	77	78	-	-	27	27

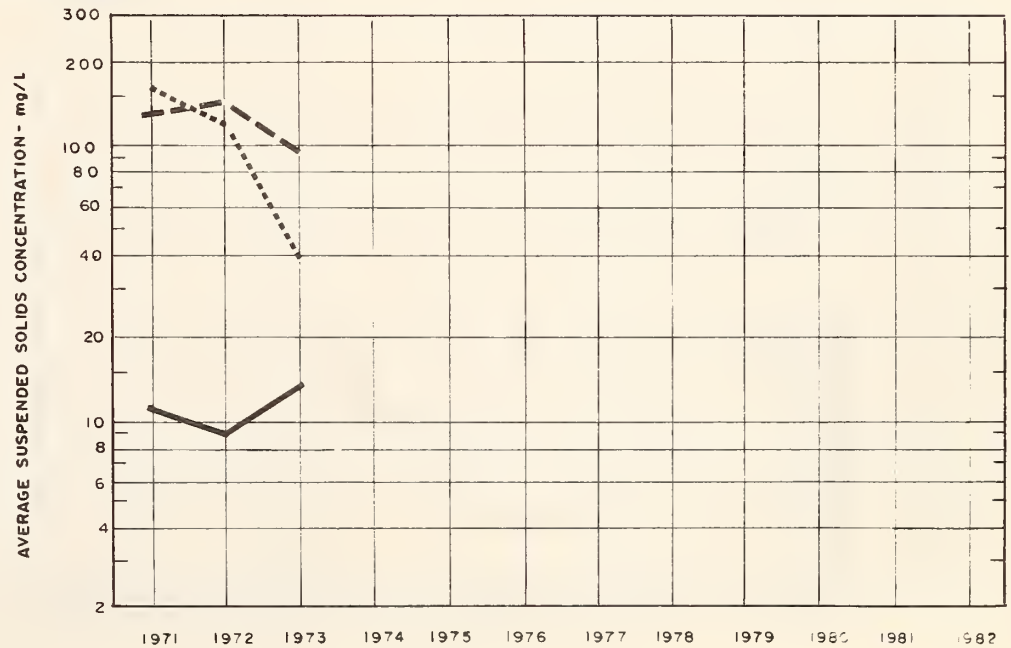
BIOCHEMICAL OXYGEN DEMAND



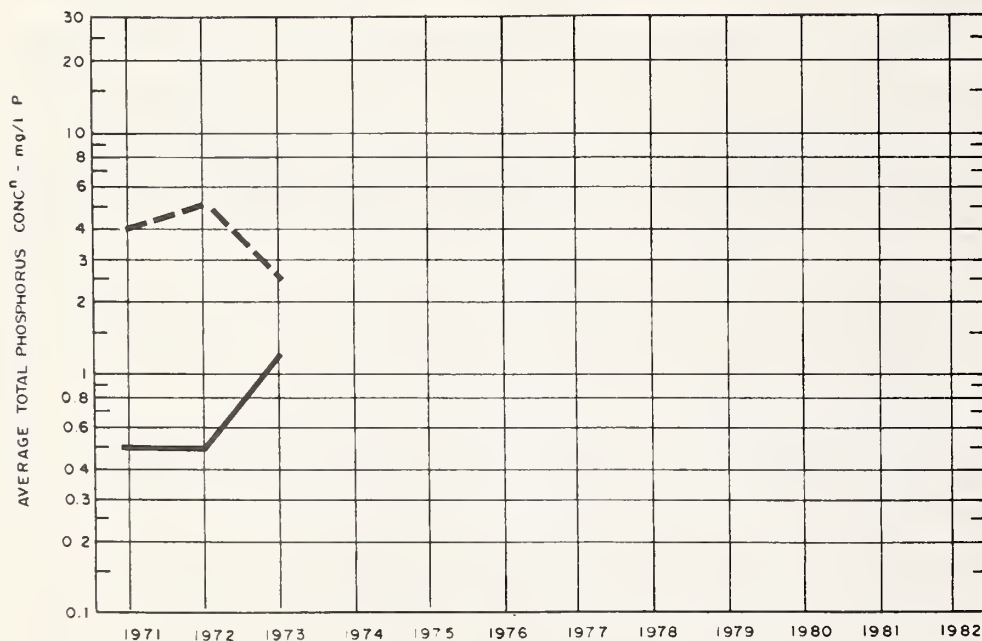
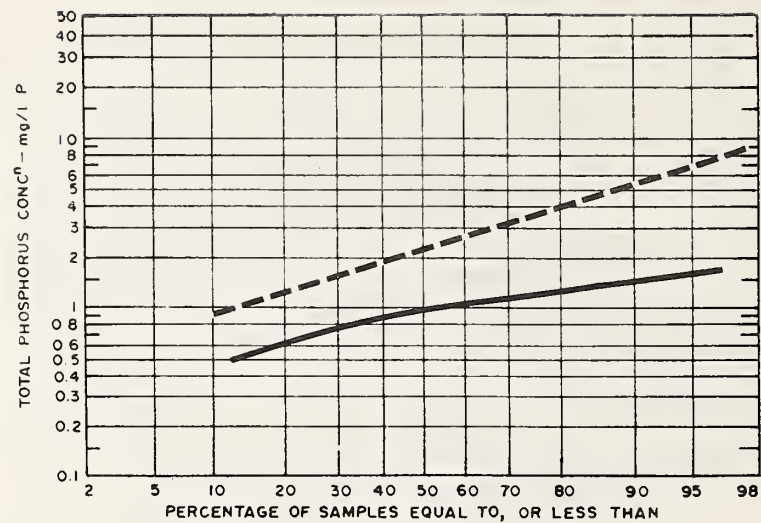
SUSPENDED SOLIDS



PLANT INFLUENT - - - - -
 PRIMARY EFFLUENT
 PLANT EFFLUENT —————



PHOSPHORUS

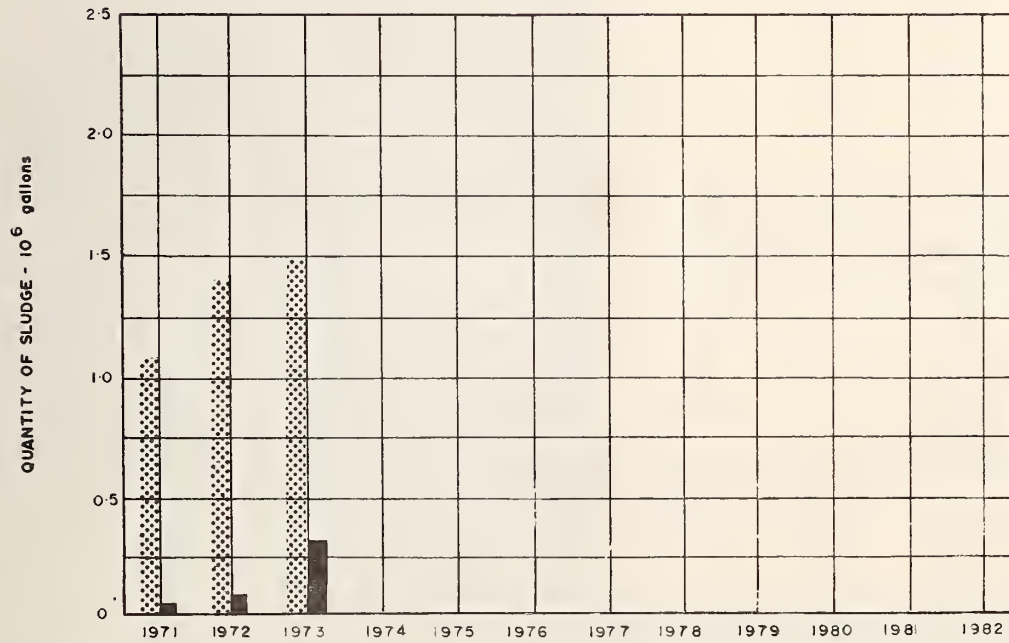
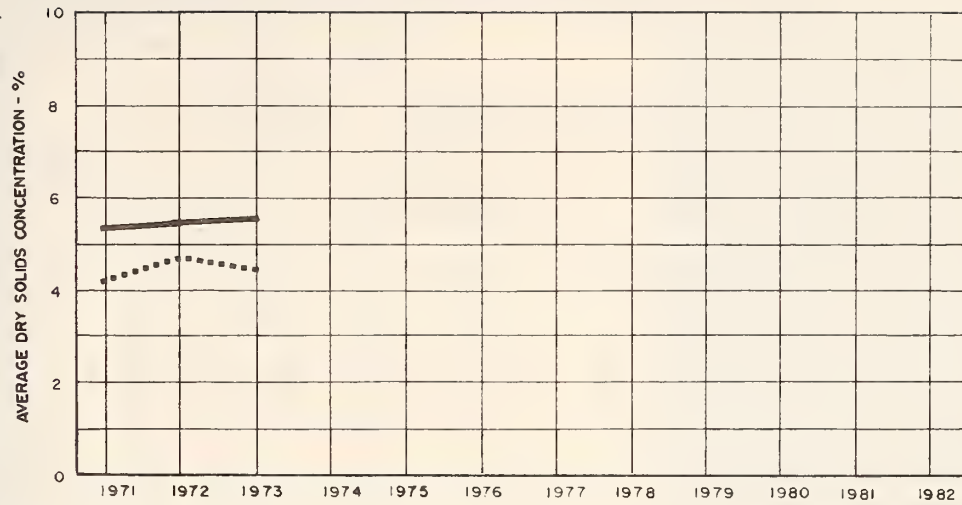


PLANT INFLUENT - - - - -

PLANT EFFLUENT —————

DIGESTION

RAW SLUDGE
DIGESTED SLUDGE ———



RAW SLUDGE TO DIGESTER
DIGESTED SLUDGE REMOVED ———

TREATMENT DATA

MONTH	GRIT	CHLORINATION		PRIMARY EFFLUENT		AERATION			SLUDGE DIGESTION and DISPOSAL							
	QUANTITY REMOVED cubic feet	CL ₂ USED pounds	AVG DOSE mg/l	BOD mg/l	SUSPENDED SOLIDS mg/l	MLSS CONC mg/l	F/M day ⁻¹	AIR 1000 ft ³ lb BOD	RAW SLUDGE			DIGESTED SLUDGE			SUPER- NATANT T. S. %	AMOUNT HAULED cubic yards
									QUANTITY 10 ³ gallons	TOTAL SOLIDS %	VOL. SOLIDS %	QUANTITY 10 ³ gallons	TOTAL SOLIDS %	VOL. SOLIDS %		
JAN	26	650	1.2	30	42	3800	0.08		114	4.7	68		5.6	39	1.2	
FEB	13	540	1.1	48	54	3700	0.13		103	4.8	66	25	5.8	40	1.6	150
MAR	53	640	1.2	27	52	6400	0.07		119	4.8	64		5.1	41	1.1	
APR	15	740	1.6	23	47	3500	0.06		117	4.5	60		5.2	38	1.2	
MAY	57	960	2.1	12	38	4400	0.02		137	4.6	68	18	5.7	37	1.9	105
JUNE	89	940	2.0	34	39	3600	0.09		114	4.2	64	10	7.9	39	2.0	60
JULY	63	1050	2.3	14	30	3400	0.04		138	4.4	63	40	5.4	41	1.0	240
AUG	130	1030	2.2		35	3200			118	4.4	69	43	5.4	39	1.5	255
SEPT	30	1019	2.3		36	3000			131	4.4	61	5	5.4	41	1.5	30
OCT	30	1000	2.2		32	3100			138	3.9	56	40	5.6	42	1.9	240
NOV	35	920	1.9		33	3100			132	4.4	64	59	5.4	41	1.4	352
DEC	5	1080	2.3		36	2900			135	4.3	65	35	4.9	41	0.9	21
TOTAL	546	10560	-	-	-	-	-	-	1496	-	-	275	-	-	-	1453
AVG.	0.7 cu. ft/mil gal	880	1.8	27	40	3700	0.07		125	4.4	64	31	5.6	40	1.4	161

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ENVIRONMENT.

TD 227/C366/W38/1973/MOE
CAMPBELLFORD: WATER POLLUTION
CONTROL PLANT. 1973 ANNUAL
OPERATING SUMMARY.

DATE	ISSUED TO
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